

CHAPTER III

RESEARCH METHODOLOGY

Chapter three provides the methodology in conducting the research and description of research procedure in order to find out the answer from research questions stated in Chapter I. This chapter presents four main parts of the investigation: Formulation of problems, research design, site and participants, research procedures, data collection technique, and data analysis technique.

1.1 Formulation of problems

This study is intended to identify the effects of online vocabulary games towards the English vocabulary acquisition in 4th grade elementary students at one of the International Schools in Bandung. This research is considered appropriate to the students in 4th grade regarding the phenomenon of online gaming and computer game-based learning in their ages, especially in Bandung. In addition, the study is aimed at analyzing their perceptions towards online vocabulary games in order to acquire new vocabularies. Therefore, this study is guided through the following questions:

1. How do online vocabulary games help students learn and retain vocabulary?
2. What are the students' perceptions towards online vocabulary games on vocabulary learning in the classroom?

1.2 Research Design

The research was employed by using the qualitative research method. The qualitative research basically has the purpose to understand the phenomenon in depth which is based on how the participants in the research perceive it (Gay, 1996). It also seeks the information about someone's beliefs, point of view, or attitude of past events which influence to the present condition (Best, 1970, cited in Cohen et.al, 2007).

Moreover, a case study was carried out as this strategy presents the phenomenon with its context (Yin, 2003, cited in Duff, 2008). The purpose of a case study is to retain the holistic and meaningful characteristics of real-life events (Yin, 2003). Thus, the involvement of the researcher in this study is considered as a must in order to get in-depth understanding about the participants' perspective of a phenomenon. (Gall et.al, 2003, cited in Duff, 2008).

As this study is purposed to discover the way online vocabulary games help students to learn and retain vocabulary and to reveal the students' perceptions towards the online vocabulary games in language learning, it is necessary for the researcher participate in the study to observe the participants' activities within the setting as well as their own perspectives on those activities provided in the classroom session. Considering the reason above, a case study is suitable to be applied in this study.

1.3 Site and participants

The research was conducted in one of the International Schools in Bandung. This institution was chosen because of several reasons. First, the researcher was following his PLP (*Program Latihan Profesi*) program as one of the lessons in the 8th semester. Thus, while the researcher was doing his PLP program, he decided to conduct the research there. Second, since the school is an International School, the language used was fully English and also the existence of computer lab as well as internet connection helped the researcher to conduct the research.

The participants were coming from the 4th grade students. Then, three out of ten students were selected based on the high achiever student, middle achiever student, and low achiever student categories based on their test taken on the first meeting. The learning schedules for 4th grade students make it possible for the researcher to conduct the research. They have schedule for "Vocabulary" lesson and also the accessibility to the computer lab.

1.4 Research procedure

The procedures of this study were gathered by several steps that can be described as follows:

1. The researcher began to select online vocabulary games to be used in the research. The selected online vocabulary games were from www.eslgamesplus.com and www.vocabulary.co.il. The selected online vocabulary games were considered appropriate as they provided the adjustable difficulty for 4th grade students. Moreover, the websites were also included the elements mentioned by Wood (2001) and Yip and Kwan (2006). Furthermore, Wood (2001) mentioned five guidelines to help in designing effective vocabulary learning software from an educational perspective:
 - a. Relating the new to the known;
 - b. Promoting active, in-depth processing;
 - c. Providing multiple exposures to new words;
 - d. Teaching students to be strategic readers;
 - d. Promoting additional reading.

With regard to the desirable technical features of a vocabulary web site, Wood (2001) suggested the following:

- a. Animations;
- b. Sound components;
- c. Hints or clues related to word meaning;
- d. Multimodal presentation of information;
- e. Online definitions, glossaries or thesauruses.

The websites mentioned above are considered covering the aspects suggested by Wood.

2. The researcher started to begin the process by learning and selecting vocabularies through online vocabulary games mentioned above. It was used to select some vocabularies to be used as the test for the students.

3. The vocabulary test would be given to the ten students of 4th grade. It was used to find out their prior knowledge on vocabulary acquisition. In addition, the test was also used to discover the participants of higher, middle, and lower achiever students to be participated on the research. The participant were asked to do:
- Part I. Translating vocabularies into Bahasa Indonesia.
 - Part II. Choosing the synonym or antonym from provided words.
 - Part III. Matching the correct answers into the appropriate sentences.
 - Part IV. Answering questions based on the provided pictures.
 - Part V. Circling the correct words based on the empty boxes provided.

The test was created based on the online vocabulary games what would be given to the students. The results of the test were attached in the appendices' part.

4. After conducting the test, the students learned vocabularies through online vocabulary games from www.eslgamesplus.com and www.vocabulary.co.il in computer lab. Here, the researcher played a role as the teacher-researcher. This role was selected because by doing this way; the teacher would be possible to conduct observation while participating in students learning activity. Below are the schedule for vocabulary learning process through online vocabulary games,

Table 3.1
The Teaching Schedule

No	Date	Topics and samples of vocabularies	Activities
1	13 th April 2015	Action, Zoo, Sea animals (Sweep, sneeze, jump, write, dance, fly, clap,	The students played online matching games. They had to match the pictures provided to

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		draw, camel, giraffe, kangaroo, bear, octopus, shark, seal, shrimp, clam, turtle)	the correct words. While joining the games, the teacher also had the role as researcher
2	16 th April 2015	Bathroom, bedroom, birds, insects (Sink, comb, bathtub, shower, plunger, wardrobe, rug, curtains, parrot, turkey, eagle, pigeon, grasshopper, cockroach, fly)	The students played online matching games. They had to match the pictures provided to the correct words. While joining the games, the teacher also had the role as researcher
3	20 th April 2015	Jobs, kitchen, vegetables and weather clothes. (Dentist, waiter, zookeeper, postal worker, pot, microwave, utensils, toaster, bell pepper, cauliflower, lettuce, sunny, mittens, scarf, sweater, boots) Synonym and Antonym (Inability – achievement, admire – respect, conceal – hide, amuse – bore, anticipate- expect).	The students played online matching games. They had to match the pictures provided to the correct words. While joining the games, the teacher also had the role as researcher The students played online guessing game. They guessed whether the words provided were synonym or antonym. While joining the games, the teacher also had the role as researcher
4	22 th April 2015	Synonym and Antonym (Ache – hurt, inability – achievement, admire – respect, conceal – hide, amuse – bore, anticipate- expect)	The students played online guessing game. They guessed whether the words provided were synonym or antonym. While joining the games, the teacher also had the role as researcher The students played online

		<p>Bathroom (Bathroom, bathtub, toothpaste, brush, toothbrush, sink)</p>	<p>vocabulary games related to the bathroom. The online game was played through simulation of game car racing to answer the questions given. While joining the games, the teacher also had the role as researcher</p>
5	27 th April 2015	<p>Vocabularies related to “The movie” (Scary, stunts, popcorn, production, horror)</p>	<p>The students played online quiz simulation about “The movie”; vocabularies which usually exist related to the cinema or creating the movie. While joining the games, the teacher also had the role as researcher</p>
6	30 th April 2015	<p>Preposition (in, on, for, by, to, from)</p> <p>Action progressive verbs (Eating, cooking, dancing, flying, drinking, driving)</p>	<p>The students played online gap filling games. The students had to fill the gap by dragging the correct answers to the boxes given. While joining the games, the teacher also had the role as researcher</p> <p>The students played online vocabulary games related to the action verbs in progressive tense. The online game was played through simulation of game car racing to answer the questions given. While joining the games, the teacher also had the role as researcher</p>
7	4 th May 2015	<p>Verbs followed by preposition (complained to, listen to, spends on, suffer from)</p>	<p>The students played online gap filling games. The students had to fill the gap by dragging the correct answers to the boxes given. While joining the games, the teacher also had the role as researcher</p>

		Weather, clothes, and advice (Hot, T-shirt, shorts, jacket, sunglasses, sunny, cold, take off, put on, don't take, don't forget)	The students played online "wheel" game. This game was played by spinning the wheel and answering the questions based on the topics pointed by the wheel. While joining the games, the teacher also had the role as researcher
8	7 th May 2015	Vocabularies related to "The movie" (Scary, exciting, animated, documentary, review)	The students played online quiz simulation about "The movie"; vocabularies which usually exist related to the cinema or creating the movie. While joining the games, the teacher also had the role as researcher
9	11 th May 2015	All of the vocabularies done in the previous activities	The students played "Hangman" in the classroom. This activity was conducted to review and to check their understanding about the previous materials. While becoming the judge, the teacher also had the role as researcher

5. The researcher administered questionnaire and interview to the students after all of teaching sessions were done.
6. The researcher analyzed the data from observation, interview and questionnaire qualitatively.
7. The researcher concluded the findings and finished the thesis.

1.5 Data collection

The data was collected in one of the International schools in Bandung. The participants were 4th grade students during the vocabulary lesson. The data used in this research is related to several online vocabulary games processes, for example, the interactions between the players or the game features that helped students learn vocabularies. In this research, the data was gained through the observation,

questionnaire and interview to the participants. According to Denzin, NK & Lincoln YS (2000), the various sources of data from a case study were employed to get better understanding in interpreting matters.

The types of data collection are elaborated as follows.

1.5.1 Classroom Observation

In this research, observation was aimed at finding out whether the online vocabulary games help students to learn and retain vocabulary or not. The observation was taken place in the computer lab during the vocabulary lesson through online vocabulary games. While students were playing the games, the researcher observed what the students did during the lesson. It included the nature of students' conversation during the lesson, students' strategies in solving the game, and competing during the game between players. The aim of this observation is to reveal students' pattern and behavior in learning vocabulary through online vocabulary games.

The instruments which were used in this observation were field notes and the researcher also took some photos from their activities. The lesson and also observation took 45 minutes per meeting. Moreover, the lesson and observation were conducted 9 times. The last meeting (9th meeting) was vocabulary lesson conducted in the classroom because it was the last day for testing the result from learning vocabulary through online vocabulary games by doing "hangman" game in the classroom.

Observation was conducted to look for the information of the accessed behavior of the participants in the setting where it takes place (Creswell, 2000). Moreover, Cohen et.al (2007) stated that observation has a characteristic which shows natural situation and authentic information.

1.5.2 Questionnaire

The aims of this technique were to find the way online vocabulary games help students to learn and retain vocabulary and also to find out their perceptions towards online vocabulary games on vocabulary learning in the classroom.

The questionnaire was distributed to the students after they have already finished all of the vocabulary teaching session. Ten students from 4th grade class participated in completing the questionnaire. It was conducted after the final exam for primary students. Questionnaire is one of the research instruments to collect data. Wilson and McLean (1994, cited in Cohen et.al, 2007) stated that,

The questionnaire is a widely used and useful instrument for collecting survey information, providing structured, often numerical, being able to be administered without the presence of the researcher, and often being comparatively straightforward to analyze.

In this research, close-ended questionnaire was chosen for gathering the information. Close-ended questionnaire is useful to convey information that is stated with the issue of the research (Creswell, 2009).

In line with this, likert scale as one of the close-ended questionnaire was applied to find out students' perception towards online vocabulary games in language learning. Sugiyono (2009, pp. 93-96) noted that Likerts scale is used to measure someone or group of people attitudes, opinions, and their perceptions related to social phenomenon. To complete the questionnaire, the students were allowed to choose one of the range numbers for each statement which is suitable with their perceptions. Below is the form of questionnaire,

Table 3.2
Sample of questionnaire

No	Statements	Responses			
		Strongly agree	Agree	Disagree	Strongly disagree
1	Learning vocabulary through games is more interesting than				

	doing worksheet paper.				
2	I like learning vocabulary through computer games.				
3	I like learning vocabularies by using online vocabulary games.				
4	Practicing vocabulary through online vocabulary games is better than doing vocabulary worksheets				
5	I had fun learning vocabulary using the online vocabulary games.				
6	The activities in the online vocabulary games were interesting.				
7	The pictorial illustration on the online vocabulary games helped me to imagine the real things in my daily life so it was easier to acquire vocabulary.				

Adapted from, Pertanika J. Soc. Sci. & Hum. (2012) . “Using Computer Games to Improve Secondary School Students’ Vocabulary Acquisition in English”. *Social Science & Humanity Journals*. 20 (4): 1015 – 1018.
 and Yip, F., & Kwan, A. (2006). Online vocabulary games as a tool for teaching and learning English vocabulary. *Educational Media International*, 43(3), 233-249.

1.5.3 Interview

The interview was conducted after the questionnaire has already done by the ten participants. More specific participants were selected from the 4th grade students. The three out of ten students were selected to be interviewed. The chosen students were from high achiever, middle achiever, and low achiever student based on the result of the test given in the first meeting. The aim of selecting three students in this interview is to gain better and deeper understanding

based on different view of students' level towards online vocabulary games in the school vocabulary learning process.

In this research, the interview used open-ended questions to focus on students' perceptions towards online vocabulary games in language learning. The open-ended interview enables the researcher to compare the responses from the interviewees (Paton, 1998 cited in Cohen et.al, 2007). Then, the interview is conducted by asking the participants personally in which the researcher asks and records the participants at a time (Creswell, 2009). This interview is used to discover the way online vocabulary games help students to learn and retain vocabulary and students perception towards online vocabulary games on vocabulary learning in the classroom.

The interview was conducted in bilingual in order to ease the students facing difficult word selection to express their perceptions easily. Interview technique allows the participants to express their interpretation without any forces from researcher's perspectives (Creswell, 2009). It can also explore more information from the participants which cannot be obtained from observation or another instruments for collecting qualitative data (Creswell, 2009).

The steps for interviewing the students for this research are proposed by Creswell (2009) including: 1. Select interviewees based on the purposeful sampling; 2. Record the entire interview, including the questions which are asked by the researcher; 3. Write the main idea from interviewees' responses; 4. Stick with the questions, but keep maintaining the flow of the interview.

The questions for interview are elaborated below,

1. Do you enjoy learning vocabulary through online vocabulary games?.
Tell me your reason!
2. How do you learn vocabularies from online vocabulary games?
3. What features in online vocabulary games which help you to learn and retain vocabularies?
4. How did competitions with your friends help you to learn vocabulary while playing online vocabulary games?

5. How did the illustration in the games help you to learn and retain vocabulary?
6. How did the animation, sounds and music help you in learning vocabulary through online vocabulary games?
7. How did immediate feedback help you to learn and retain vocabulary?
8. How did contextuality provided by the games help you to learn and retain vocabulary?
9. Do you feel any improvement in your vocabulary mastery by learning online vocabulary games?
10. Do you prefer other online vocabulary games to be used in further vocabulary learning or worksheet paper? Why?
11. What should the teachers do in order to make vocabulary learning process through online vocabulary games better?

1.6 Data analysis

The data was critically analyzed using various techniques. Most data was elaborated descriptively since the characteristic of a qualitative study is that the phenomenon being studied has to be described comprehensively. In addition, the questionnaire data was elaborated statistically since it provided the calculation result from students' answers. The data analysis technique will be specifically elaborated below.

1.6.1 The analysis of the classroom observation

The teaching and learning processes were conducted 9 times, starting from the second week of March until the second week of May. In analyzing the observation result, the researcher tried to find the behavior pattern towards the use of online vocabulary games in learning vocabulary.

The researcher took photos and also field notes which were conducted during the 45 minutes of the lessons. The researcher observed all of the activities done by the participants during the lesson. It included the nature of students'

conversation during the lesson, solving the game, and competing during the game between players, and also obstacles while learning using online vocabulary games. The result was elaborated descriptively supported by some evidence to strengthen the result.

Classroom observation was aimed to investigate the natural of behavior of the participants (Hadi, 1986 cited in Sugiyono, 2009). The researcher also participated in learning process while conducting online vocabulary games as the media in teaching vocabulary.

1.6.2 The analysis of the questionnaire

In this research, the researcher used close-ended questionnaire in form of Likert scale. It was given after the last meeting and all students got the same questionnaire. There were four ranges of Likert scale to find out about the student's perception which covers four different categories. The responses in the questionnaire were categorized into four different scores as in the following,

Table 3.3
Categories of the responses

Categories	Strongly agree	Agree	Disagree	Strongly disagree
Scores	4	3	2	1

The research also used the percentile formula to analyze the questionnaire data. Then, the data were interpreted based on the frequency of students' answer. Based on Hatch and Farhady (1982, p. 46), the percentile formula is formulated as follows:

$$P = 100 \times \frac{F}{N}$$

P = Percentile

F = Frequency of students' answer

N = Respondent

1.6.3 The analysis of the interview

The data from interview session were transcribed to help researcher in processing the data. Then, the second step was categorizing the data based on the research questions provided. The data from the interview session will be attached in research paper and the identity information was in a confidential. The result was elaborated descriptively based on the result from interview sessions with the three participants.

In line with this, here are several steps used in analyzing the data from interview; transcribing, and/or reviewing data, and analyzing all interview data (Boyce and Neale, 2006). As proposed by Boyce and Neale (2006), the first step was transcription. By conducting transcription, the data was easy to be interpreted as good result.

1.7 Concluding remark

This chapter has elaborated the formulation of problems, research design, site and participants, research procedure, data collection techniques which consisted of classroom observation, questionnaire, and interview. This chapter also explained the data analysis which consisted of the analysis the classroom observation, questionnaire and interview. The next chapter discussed the findings and discussion of the research.